AMENDMENTS TO THE CLAIMS

Please amend claim 1 and add new claim 12 as follows:

1. (currently amended) A method for fabricating a complimentary metal-oxide-silicon (CMOS) image sensor including a low voltage buried photodiode and a transfer transistor, the method comprising:

a) forming a field oxide for defining an active area and a field area on a certain area of an epitaxial layer formed on a substrate, and forming a gate of a transfer transistor on the epitaxial layer of the active area;

b) forming a low voltage buried photodiode doping region in alignment with one side of the gate of the transfer transistor;

c) forming a spacer insulation layer by stacking layers of oxide and nitride ~~over the whole structure~~ on the entire resulting structure of part (b);

d) forming a spacer block mask on the spacer insulation layer to open area opposite the transfer transistor from the low voltage buried photodiode doping region while leaving the photodiode doping region covered by the spacer insulation layer and spacer block mask; and

e) removing the spacer insulation layer not covered by the spacer block mask to form a spacer on a sidewall of the transistor, and removing the spacer block mask~~, forming a second mask over the portion of the spacer insulation layer remaining on the photodiode doping region and leaving the area opposite the transistor open, and forming a floating diffusion region on the open area opposite the transfer transistor from the photodiode doping region while the second mask and the remaining portion of the space insulation layer is in place over the photodiode doping region~~.

2. (previously presented) The method for fabricating CMOS image sensor as recited in claim 1, wherein the oxide layer of the spacer insulation layer has a thickness ranging from about 200Å to about 2000Å, and the nitride layer of the spacer insulation layer has a thickness ranging from about 200Å to about 1000Å.

3. (previously presented) The method for fabricating CMOS image sensor as recited in claim 1, wherein part b) further comprises: sequentially performing n-type ion implantation and p-type ion implantation using a first mask with an opening disposed over the low voltage buried photodiode doping region.

4. (previously presented) The method for fabricating CMOS image sensor as recited in claim 3, wherein the spacer block mask of part d) is formed using the first mask of part b) and a negative photoresist.

5. (withdrawn) A method for fabricating CMOS image sensor comprising low voltage buried photodiode and transfer transistor, the method comprising:

a) forming a field oxide for defining active area and field area on certain area of an epitaxial layer formed on a substrate, and forming a gate of transfer transistor on the active layer of the epitaxial layer;

b) forming an ion implantation oxide layer on top of epitaxial layer between gates of the transistor, and forming doping region for the low voltage buried photodiode inside the epitaxial layer;

c) forming a sacrificial nitride on the whole structure, and forming a spacer insulation layer on the sacrificial nitride layer;

d) forming spacers on both sidewalls of transistor by blanket etching; and

e) removing residuals of said sacrificial nitride from surface of the photodiode, and forming a floating diffusion region on other side of the transfer transistor.

6. (withdrawn) The method for fabricating CMOS image sensor as recited in claim 5, wherein the ion implantation oxide layer has a thickness ranging from about 100Å to about 500Å, and the sacrificial nitride has a thickness ranging from about 100Å to about 500Å.

7. (withdrawn) The method for fabricating CMOS image sensor as recited in claim 5, wherein said step of forming doping region of low voltage buried photodiode is further characterized by sequentially performing n-type ion implantation and p-type ion implantation using a mask for opening doping region for the low voltage buried photodiode.

8. (withdrawn) A method for fabricating CMOS image sensor including a low voltage buried photodiode and a transfer transistor, the method comprising:

a) forming a field oxide for defining active area and field area on certain area of an epitaxial layer formed on a substrate, and forming a gate of transistor on the epitaxial layer of the active area;

b) forming an ion implantation oxide layer on top of epitaxial layer between gates of the transistor and the field oxide, and forming a doping region for the low voltage buried photodiode inside the epitaxial layer;

c) forming a sacrificial nitride on the whole structure, and forming a spacer insulation layer on the sacrificial nitride layer;

d) forming spacers on both sidewalls of transistor by blanket etching; and

e) forming a floating diffusion region on other side of the transfer transistor.

9. (original) A CMOS image sensor made in accordance with the method of claim 1.

10. (withdrawn) A CMOS image sensor made in accordance with the method of claim 5.

11. (withdrawn) A CMOS image sensor made in accordance with the method of claim 8.

12. (new) The method for fabricating CMOS image sensor as recited in claim 1, further comprising:

forming a second mask over the portion of the space insulation layer remaining on the photodiode doping region and leaving the area opposite the transfer transistor open; and

forming a floating diffusion region on the open area opposite the transfer transistor from the photodiode doping region while the second mask and the remaining portion of the space insulation layer is in place over the photodiode doping region.